

IN THE CLAIMS

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

1. (Currently Amended) A process for the fabrication of a polymeric optical microstructure, being supported or not microstructure comprising the acts of:

supporting the microstructure by a substrate,
starting from forming a thermoplastic mixture,
wherein mixture by blending a thermoplastic polymer is blended
with a UV curable resin and a thermally stable photo-initiator, to
obtain a blend having a lower viscosity than the viscosity of said
polymer, said blend being molded and the molded blend being cured
by means of polymer;

molding said blend; and
curing the molded blend by UV radiation to obtain a the
Polymeric optical microstructure having a thickness to diameter

ratio of the polymeric optical microstructure is from 1/50 to 1/1000.

2. (Currently Amended) AThe process according to claim 1, wherein said thermoplastic polymer has a weight-average molecular weight from 0.1 to 5 times the critical molecular weight for entanglement, M_{ex} , more preferably in the range from 0.5 to 2 times $M_{ex} \cdot M_{cr}$.

3. (Currently Amended) AThe process according to claim 1, wherein said thermoplastic polymer contains a minor amount of reactive groups.

4. (Currently Amended) AThe process according to claim 1, wherein said thermoplastic polymer is an amorphous thermoplastic polymer.

5. (Currently Amended) AThe process according to claim 1, wherein said thermoplastic polymer is a copolymer or terpolymer.

6. (Currently Amended) A-The process according to claim 1,
wherein said thermoplastic polymer is selected from the group,
consisting of ~~polymethylmethacrylate~~, polyethylmethacrylate,
polyhexylmethacrylate, polydecylmethacrylate, polymethylacrylate,
polyethylacrylate, polyhexylacrylate, polydecylacrylate,
polyvinylacetate, polystyrene, poly- α -methylstyrene, poly- α -
~~ethylstyrene~~, ~~polycarbonate~~, polyester, cycloolefinic polymer and
cyclo-olefinic copolymer.

7. (Currently Amended) A-The process according to claim 1,
wherein the concentration of the UV curable resin is from 20 - 80
~~vol.%, more preferably from 40 - 60 vol.% of said blend.~~

8. (Currently Amended) A-The process according to claim 1,
wherein said UV curable resin is an epoxy ~~resin~~, preferably
~~diglycidylether~~ resin including diglycidylether of bisphenol-A.

9. (Currently Amended) A-The process according to claim 1,
wherein said UV curable resin is selected from the group consisting
of acrylates and methacrylates, preferably ethoxylated bisphenol-A

~~dimethacrylate, hexanedioildiacrylate and polyethylenediacrylate methacrylates.~~

10. (Currently Amended) A-The process according to claim 1, wherein said thermoplastic polymer and said UV curable resin show a substantially similar refractive index.

11. (Currently Amended) A-The process according to claim 1, wherein said substrate consists of metal, polymer, silicon, glass or quartz-glass.

Claims 12-15 (Canceled)

16. (New) The process of claim 1, wherein the polymeric optical microstructure has a thickness of less than 1 mm.

17. (New) The process of claim 1, wherein the UV curable resin is selected from the group consisting of ethoxylated bisphenol-A dimethacrylate, hexanedioildiacrylate and polyethylenediacrylate.

PATENT

Serial No. 10/582,578

Amendment in Reply to the Office Action of April 16, 2009

18. (New) The process of claim 1, wherein concentration of the UV curable resin is from 40 - 60 vol.% of said blend.

19. (New) The process of claim 1, wherein vitrification of the thermoplastic mixture occurs at not lower than 50°C.

20. (New) The process of claim 1, wherein the thickness to diameter ratio of the polymeric optical microstructure is from 1/50 to 1/100.